

# Chapter 5

## ALCOHOL AND DRUG ABUSE AND DEPENDENCE

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## INTRODUCTION

Among the numerous studies<sup>1,2,3</sup> that have attempted to explain why some occupational groups claim a higher level of excessive alcohol consumption, the common threads of stress and boredom are found. It is not surprising that alcohol and substance abuse could become problems in a combat environment because they are expedient pathways to stress management.

The history of past wars demonstrates this. In the late 1960s and early 1970s, thousands of returning soldiers who had served in Vietnam and reportedly used narcotics there aroused public anxiety about the existence of a drug epidemic among U.S. troops.<sup>4</sup>

Before the early 1970s, the military dealt with serious substance abuse by administrative and legal means (discharge and punishment) although it did not respond to every instance of substance abuse. The medical concerns were with treating serious medical complications. However, after 1970, Congress mandated a change from punitive measures to treatment and rehabilitation. Since then, improvements have resulted in providing a comprehensive program based on command responsibility with significant medical interface. Currently, the basic policy in the military services is to keep a sustained effort to prevent substance abuse problems from occurring and to eliminate from the service those who cannot effectively be restored within a reasonable period.

Substance abuse is not tolerated not only because of its physiological effects on the abuser that would jeopardize mission requirements, but also because of its psychosocial implications in the unit. While a kind of cohesion can occur around the use of substances,<sup>1</sup> substance abuse is definitely damaging to the good order and morale of the unit and interferes with mission accomplishment.

The command structure has been charged with the responsibility for the alcohol and drug abuse program. The medical services are to offer consultation and technical supervision to individuals who work for the command and to provide specific and direct medical support for those with identified problems. The purpose of this chapter is to assist medical personnel to achieve those command goals and objectives.

The illegal use of drugs in civilian life and in the military began to steadily increase after 1967, and illicit drug usage among military personnel was

reported to have doubled every year from 1967 to 1969.<sup>5</sup> The return from Vietnam of thousands of soldiers who had reportedly used heroin raised public anxiety over the possibility of a drug epidemic, and a congressional investigation confirmed that overseas drug use was prevalent among U.S. troops.<sup>4</sup> Indeed, the Vietnam conflict was the first American war in which drug and alcohol dependency overshadowed combat stress reactions as a problem for military psychiatry. The large prevalence of drug abuse among troops in Vietnam had unique political sensitivity for an administration that had campaigned on a strong law and order platform that tied drug use to rising crime rates. It also added fuel to opponents' demands for immediate troop withdrawals, which, in turn, was perceived as a major political threat to the President's Vietnamization program.<sup>6</sup>

In response, the administration created a drug abuse office within the Federal Government, emphasizing the prevention of drug abuse through education and law-enforcement procedures focusing on detection. The day after the President declared a national counteroffensive against drug abuse, the U.S. Army in Vietnam began urine testing for opiates for all soldiers completing their tours. Detoxification, treatment, and rehabilitation were provided to those who were identified as heroin abusers. Army regulations were soon modified to create an amnesty for those who voluntarily turned themselves in for treatment. This amnesty was a big step because it eliminated criminal consequences to treating individuals for problems with narcotics. By November 1971, unannounced testing for amphetamines and barbiturates, as well as opiates, had commenced worldwide, and treatment programs were being phased in throughout the world.<sup>7</sup>

Recently, the epidemic of crack and cocaine use in the civilian population has had parallel consequences in the military. Given the generally poor rate of rehabilitation for these substances using conventional treatments, the appearance of cocaine and crack on the military scene has resulted in significant manpower losses. Koshes and Shanahan<sup>8</sup> tracked the disposition of soldiers who tested positive for cocaine at a U.S. Army training post. All of those who tested positive were dismissed from the service, many of whom were high-ranking enlisted soldiers with many years of service.

## HISTORY

### Pre-1971

Alcohol problems have existed in most of the armies throughout the world since historical records have been kept. Narcotic addiction occurred during the Civil War, World War I, World War II, the Korean conflict, and the Vietnam conflict, as well as with soldiers stationed in the continental United States and overseas between and after the conflicts. Substance abuse has always been a potential occupational hazard for medical personnel. As Farley has observed, "Addiction to mood altering chemicals ... is also a major problem in the medical profession and particularly in the specialty of anesthesia."<sup>9(p1)</sup> This is in part because anesthesiologists have legal (although controlled) access, in part because of the high stress and responsibilities of the profession, and in part because of a tendency for educated medical professionals to rationalize that they can self-administer dangerous and addictive drugs safely.

The highly addictive properties of controlled medical substances such as the anesthetic fentanyl create unique problems for medical providers. The temptations of access and the dangers of self-administration of these drugs by military medical personnel was evidenced in a near-epidemic of fentanyl abuse among tri-service anesthesiologists and nurse anesthetists in the early 1980s. This abuse led to the special rehabilitation program for military personnel that is dictated by a quality assurance regulation.<sup>11</sup> This regulation linked substance abuse rehabilitation and medical quality assurance. The purposes were to ensure that during rehabilitation, the practice credentials of drug-dependent health professionals were restricted, and that their recovery was carefully monitored by medical authorities. These policies reflected impaired health provider statutes that were enacted by the state regulatory authorities. These statutes encourage rehabilitation and full return to practice but also protect the consumer from possible harm during the provider's recovery.

During the 1800s, intoxication and delirium tremens (DTs) from bromides resulted in many hospital admissions. Barbiturate intoxications were a common problem in the 1900s. The introduction of lysergic acid (LSD) in the 1950s resulted in newer problems related to psychosis. Since then, many more chemical agents have been utilized with resultant problems for the military and civilian communities.<sup>2</sup>

During the Russo-Japanese War (1904–1906), the Russians identified three common types of "mental cases": depressive syndrome, general paresis, and alcohol psychosis.<sup>12</sup> In the U.S. Army, from 1907–1917, admissions for alcohol problems were 16 per 1,000 troops per annum.<sup>13</sup> During World War II, the alcohol admission rate was 1.7 per 1,000 troops per annum, while the drug addiction rate was 0.1 per 1,000 troops per annum. Combined, they made up 4.7% of all psychiatric diagnosis.<sup>14</sup> Since World War II and until 1970, the pattern had remained the same. However, in the 1970s drug abuse problems increased significantly in the armed forces.<sup>2</sup>

Attempts at solving the problems have been historically poor. The Federal Anti-Narcotic Act in 1914, the infamous prohibition act of 1919 to 1933, and the Federal Addiction Rehabilitation Act of 1966 were national attempts focusing mostly on the civilian community.

### Post-1971

The subject of alcohol rehabilitation deserves special attention in this chapter because alcohol problems have traditionally been handled somewhat apart from other drugs of abuse, yet treatment policies were closely influenced by the Department of Defense (DoD) drug counteroffensive. Initially, the recognition of the occupational significance of alcoholism and support for its treatment was stimulated by several congressional initiatives, including the passage of important enabling legislation and the establishment of the National Institute on Alcohol Abuse and Alcoholism to coordinate research and public information. The first such law, the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act,<sup>15</sup> was sponsored by Senator Harold Hughes, a recovering alcoholic, and provided the country's first comprehensive national policy on alcoholism since the repeal of Prohibition. Among its provisions, it mandated treatment and rehabilitation for federal employees, prohibited discrimination against alcoholics by hospitals that received federal funds, safeguarded the confidentiality of treatment records, and encouraged worksite programs to identify and treat drinking problems.

The year 1971 marked a turning point for military alcoholism programs when Senator Hughes introduced a companion law, Public Law 92-129, that directed the Secretary of Defense to "identify, treat and rehabilitate members of the armed forces who are drug or alcohol dependent."<sup>3(p646)</sup> Consequently, military treatment for chronic alcohol problems received increased visibility as it drew energy from incentives to combat the drug crisis that had been festering during Vietnam. This visibility was clearly a mixed blessing because DoD policies on drug abuse had begun to migrate away from the early focus on rehabilitation.

In 1980, a comprehensive policy directive expressed the policy goal as follows: "To be free of the effects of alcohol and drug abuse; of the trafficking in illicit drugs by military and civilian members of the Department of Defense; and of possession, use, sale, or promotion of drug abuse paraphernalia."<sup>16</sup> The policy clearly stated that drug and alcohol abuse were incompatible with the high standards of performance, military discipline, and readiness. The emphasis on prevention and control resulted from the recognition that drug abuse and drug addiction were not synonymous,<sup>17</sup> bolstered by the results of a worldwide survey<sup>18</sup> that found drug use was most prevalent among 18- to 25-year-olds who had not developed the mature lifestyles that preclude abuse. Thereafter, the drug problem was reinterpreted to exist more from a lack of discipline than from addiction. Accordingly, greater emphasis was placed on prevention programs directed at all military personnel and on more punitive policies aimed at drug and alcohol abusers.<sup>19</sup>

The reaction to the crash of a jet aircraft on the USS *Nimitz* in 1981 further emphasized the military's problem with drugs by revealing the high incidence of marijuana use among those sailors who were killed in the crash.<sup>19</sup> A stringent policy of zero tolerance by military authority emerged from this incident, with greater emphasis on random urine testing for drugs and severe disciplinary consequences on users of illicit drugs. Along with the view that drug abuse reflected indiscipline more than addiction came an emphasis on command sponsorship of the treatment system; that is, the alcohol and drug prevention and control programs were regarded as commanders' programs. By placing policy for these programs in line, rather than medical, channels the DoD emphasized that its primary value was for manpower conservation and the benefits were the avoidance of heavy replacement costs of skilled personnel. Thus, criteria for admission to

rehabilitation programs came to include a commander's approval and implied latitude to discharge in lieu of treatment.

As the substance abuse policy was implemented and expanded, military and civilian personnel were trained specifically for the Alcohol and Drug Abuse Prevention and Control Program (ADAPCP), and treatment facilities were created, expanded, and evaluated. Total annual DoD outlays for drug and alcohol prevention and control exceeded \$228 million in fiscal year 1987 and involved over 4,600 man years of effort.<sup>3</sup> These expenditures included the costs (including personnel) for biochemical testing, education, treatment, training, and evaluation. In fiscal year 1988, for example, more than 47,000 of the 2.1 million active duty military personnel received treatment for drug and alcohol problems. Nearly 39,000 of these individuals were treated as outpatients in 400 nonresidential facilities, while approximately 8,000 were treated as inpatients in 52 residential facilities.<sup>19</sup> This made the DoD a major provider of inpatient alcoholism treatment and one of the world's largest integrated occupational health programs targeted on substance abuse and chemical dependency.

In 1986, DoD policies on drug and alcohol abuse were placed in a broader context of health promotion that emphasized the value of healthy lifestyle on personal readiness.<sup>16</sup> By implication, alcohol abuse and drug abuse were characterized as unhealthy behaviors that are incompatible with military service. Concurrently, an emphasis on deterrence through routine urine drug screening and stringent zero tolerance policies for those detected for drug use or convicted of drunk driving has achieved significant reductions in drug abuse in the military.<sup>19</sup> From 1982 to the present time, worldwide surveys<sup>19</sup> have confirmed the substantial reduction in the use of illicit drugs and related medical and disciplinary problems.

### **Changing Trends, Unchanging Risks**

Progress in reducing alcohol abuse and alcoholism among those in higher military ranks has not, however, been as pronounced as the counter-drug program results. Bray and colleagues<sup>19</sup> reported standardized comparisons of prevalence of alcohol and drug use among military personnel and civilians with 1985 data. These analyses, which controlled for demographic differences, indicate that drug use was significantly lower among military personnel than for civilians, while heavy drinking

was significantly higher. The analyses concluded that the zero tolerance policies for drug use in the military had been effective, but military life may be conducive to a greater likelihood of abusive levels of alcohol use among military personnel than among civilians in general.

Why the difference? Although there is a substantial research literature<sup>20,21,22</sup> that attempts to relate the occurrence of high rates of excessive drinking in certain occupations as evidence for high-risk occupations, this relatively large body of literature is based on many redundant citations and small samples and is suspect on methodological grounds.<sup>20</sup> Therefore, it is difficult to explain the reported differences in consumption between military and civilian populations on job characteristics. Examination of specific groups has yielded some general attributes that may explain some of the difference. Trice and Roman,<sup>23</sup> for example, found that unstructured jobs without clear goals, jobs with remote supervision and frequent travel or isolation, jobs that require drinking as a part of the work role, and jobs in competitive settings where drinking for relief is seen as justified have greater risk for drinking problems. Plant<sup>21,24</sup> did extensive research on the brewing industry and suggested that an individual's drinking pattern can be changed through the influence of the general level of drinking among work associates, availability of alcohol, the extent that coworkers cover up excesses, lax supervision, and job stresses, including boredom. Hingston et al<sup>25</sup> did not find consistent levels of association between heavy drinking and workers' job perceptions, except that stress and boredom were significantly related to amounts consumed. They suggested, however, that stress and boredom could be the way workers rationalize excessive drinking, regardless of the actual nature of their work. As stated, Whitehead and Simpkins<sup>20</sup> found many inconsistencies in work climate explanations for excessive drinking but were able to isolate eight structural factors that were significantly related to alcohol problems in the workplace: (1) social pressure to drink alcoholic beverages frequently, (2) peer sanction of heavy drinking, (3) recruitment of heavy drinkers in the occupational field, (4) peer sanction of drinking on the job, (5) official sanction of heavy drinking, (6) separation from normal sexual or social relationships, (7) opportunity to obtain alcoholic beverages relatively inexpensively, and (8) preponderance of young workers in the occupation. Whitehead and Simpkins found that 70% of the variance in the rate of alcohol problems could be

explained by these factors. Moreover, two factors in combination—social pressure and inexpensive access—explained over two-thirds of the variance by themselves. Of these two factors, opportunity to obtain alcoholic beverages inexpensively appeared to be the most critical. Fitting these characteristics into the military context, it is not difficult to speculate that there might be relatively greater alcohol consumption among this population.

Despite the military's tendency to control drug and alcohol problems through the same disciplinary pressures, a monolithic view of drinking problems that presupposes that excessive alcohol use is voluntary and reflects immaturity cannot reconcile the phenomenon of late-onset alcoholism in adults who had been fairly indistinguishable from their military peers. The glaring flaw is the inability to explain the common phenomenon of the career soldier or sailor whose drinking became severe and disabling after 10 or 15 years of distinguished military service. It seems unlikely that any purported underlying factor of immaturity would apply to these individuals because it would have been a significant impediment to their career advancement and achievement.

How, then, are such individuals affected? In early stages, their alcoholism may be eclipsed by a myriad of medical complications of excessive drinking. Then later, because these career soldiers and sailors are too successful to fit the stereotype of the occupationally dysfunctional alcoholic, their excessive consumption is viewed as situational or voluntary, opening them to the moral imperatives of a willful misconduct model. Thus, it is critical for the clinician to appreciate that different populations may be represented in the common administrative net and to refine an individual diagnosis that correctly sorts the immature from the chemically dependent. Clearly, the DoD policy context—influenced as well by defense downsizing—impedes this objective somewhat.

Military personnel may not seek help because of real or perceived threats to their careers. That perception, observes Bray et al,<sup>19</sup> is not surprising in view of the emphasis of disciplinary action for drug use. Current policy is to process officers and senior enlisted personnel for discharge after the first detected drug offense but to give junior enlisted personnel a second chance to prove themselves. This policy is at odds with a concurrent DoD policy of encouraging individuals with alcohol problems to seek help, and the two are frequently confused. Thus, 58 percent of respondents to the 1988 World-

wide Survey expected disciplinary action would be taken against a person seeking treatment for an alcohol problem, and 60.9 percent expected it for a drug problem.<sup>26</sup> The best evidence to represent the barrier of fear is that one-third of respondents believed that those who sought help for an alcohol problem would damage their careers although military policies encourage rehabilitation. Although the healthcare provider may not be capable of changing this mass psychology, it is important to recognize its presence and its power to drive avoidance treatment-seeking and treatment-offering behavior.

The medical and psychiatric literature, however, has consistently expanded the biological understanding of addictive behavior. Many neurophysiologic research efforts have supported the notion that drug-craving behavior and repetitive drug and alcohol use may be linked to alterations in the neurochemical milieu.<sup>27,28,29</sup> Genetic factors are also postulated, especially in alcoholism,<sup>30,31</sup> particularly among Native Americans and Asians who have low levels of alcohol dehydrogenase. In addition, life-cycle studies show an increased incidence of alcohol and substance abuse in adults who have a history of attention deficit disorder as children.<sup>32,33</sup>

### **Public Law**

1971 marked a turning point for military substance abuse treatment because of the enactment of specific legislation that directed the Secretary of Defense "to identify, treat and rehabilitate members of the Armed Forces who are drug or alcohol dependent."<sup>3(p646)</sup> This legislation, Public Law 92-129, required the military to participate in full compliance with the earlier Comprehensive Alcohol

Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act of 1970,<sup>15</sup> better known as the Hughes Act. Signed by President Nixon, against the urging of influential Cabinet members,<sup>34</sup> the Hughes Act provided the country's first comprehensive national policy on alcoholism since the repeal of Prohibition. Among its provisions, it mandated alcoholism treatment and rehabilitation for federal employees, prohibited hospitals that received federal funds from discriminating against the admission and treatment of alcohol abusers and alcoholics, safeguarded the confidentiality of records of alcoholic patients, and established the National Institute on Alcohol Abuse and Alcoholism as a catalyst for fostering programs to identify and rehabilitate alcoholics with special emphasis on the workplace. Public Law 92-129 made it clear that the military also had to carry out the policies stated in the Hughes Act. It thus gave impetus to the significant expansion of alcoholism treatment programs in the military services.

In the meantime, the narcotic problems emanating from Vietnam ended with the withdrawal from Vietnam. There was also an upsurge of narcotic abuse in troops stationed in Europe during the 1970s, particularly with intravenous heroin. This drug abuse also created a hepatitis epidemic, requiring massive air evacuation of these soldiers to the continental United States.

As the substance abuse policy was implemented and expanded, military and civilian personnel were trained specifically for the ADAPCP, and treatment facilities were created, expanded, and evaluated. In addition, urine testing was implemented for the massive screening of drugs within the military. This impetus has since resulted in the successful program of prevention, control, and treatment of substance abuse as it currently exists.

## **DIAGNOSIS AND DEFINITIONS**

### **Diagnosis**

During the early 1900s, the U.S. Army classified drug and alcohol addiction separately from mental diseases. In other words, drug and alcohol problems without a physical or mental disease were considered as nonmedical disorders. Current policy still dictates medical and nonmedical disposition of soldiers identified with a psychoactive substance use, abuse, or dependency problem, despite the considerable evidence<sup>28</sup> that suggests that these disorders are genetically and physiologically based.

The U.S. Army (and all of DoD) uses the International Classification of Diseases (ICD) system. The ICD-Clinical Modification (ICD-CM) and the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., revised, DSM III-R),<sup>35</sup> which is correlated with the ICD-CM, are used in the United States for diagnostic purposes.

### **Definitions**

The following terminology is frequently encountered in substance use disorders.

- *Substance* refers to alcohol, drugs, or any chemical that, when taken, affects the physical and mental functions of an individual.
- *Substance use* refers to the consumption of alcohol or other psychoactive drugs that can have negative effects on the person's social, occupational, or physical well-being.
- *Substance abuse* is a pattern of use that results in negative consequences although these effects may not be visible or even recognized by those in the environment.<sup>3</sup>
- *Substance dependence* is a condition, psychological or physical, of interaction between a person and substance, characterized by a compulsion to take the substance on either a continuous or a periodic basis to experience its psychological effects or to avoid the discomfort of its absence.
- *Physical dependence* is an altered physiological state brought on by the frequent use of a substance and resulting in physiological symptoms on withdrawal. Note that one may become dependent on a substance without abusing it or being addicted to it as in cancer or chronic pain patients.
- *Psychological dependence* is substance dependence without the physiological evidence of dependence.
- *Tolerance* is the altered physiological state produced by the continuous use of a substance with the declining effect of the given dose.<sup>3,36</sup>

## Dependence Syndrome

The *dependence syndrome* associated with psychoactive substances is the hallmark of these addictive disorders. It is multidimensional with biological, social, and behavioral components. The *loss of control* over the substance use is the cardinal feature of this syndrome. The syndrome elements are as follows:

- Substance use takes on a regular schedule of almost continuous or daily use.
- Substance use becomes a higher priority than any other activities despite negative consequences.
- Increased tolerance develops.
- Withdrawal symptoms occur.
- The substance is used to avoid withdrawal.
- A compulsion to use the substance develops.
- Readdiction liability is possible.

Most of the above syndrome elements have been incorporated in the current DSM III-R criteria for psychoactive substance dependence. Because the military services apply the DSM III-R criteria for diagnostic purposes, it is essential that familiarity with the criteria is established. See Exhibit 5-1.

Although *tolerance* and *withdrawal* are symptoms that are listed in the DSM III-R criteria for dependence, these two symptoms are not required to make the diagnosis of dependence as had been in the original DSM III<sup>37</sup> system. To diagnose dependence, it is necessary to fulfill only three of the nine DSM III-R criteria. In addition, social and occupational impairment has also been deemphasized as being essential in the current DSM III-R diagnosis of either dependence or abuse.<sup>38</sup>

## DETERMINANTS OF SUBSTANCE ABUSE

### Individual Determinants

The use and abuse of psychoactive substances, along with the dependence syndrome, are multidetermined. The military population being a subsample of the general population is made up of individuals of various ages, personalities, and backgrounds. They thus share the biological, psychological, and social vulnerabilities of the general population. The individual determinants are significant because the constitutional vulnerabilities are present within the soldier and, given a set of circumstances, an emergence of the substance abuse disorder can occur.

Although polydrug abuse has not been conclusively linked to genetic factors, studies in alcoholism have shown evidence of genetic linkage.<sup>32</sup> These studies indicate that a child of an alcoholic has a greater risk of developing alcoholism than a child of nonalcoholic parents, even when adopted by nonalcoholics at birth.<sup>31,39</sup> There has also been noted physiological differences between children of alcoholics and those of nonalcoholics in their biological response to alcohol and other sedatives in their central nervous system function.<sup>28</sup>

Personality appears to play a more important role in the genesis of polydrug abuse than in alcoholism. Drug abusers frequently display severe

**EXHIBIT 5-1**

**DSM III-R DIAGNOSTIC CRITERIA FOR PSYCHOACTIVE SUBSTANCE DEPENDENCE AND ABUSE**

**I. Dependence**

**A. At least three of the following:**

1. Substance often taken in larger amounts or over a longer period than the person intended
2. Persistent desire or one or more unsuccessful efforts to cut down or control substance use
3. A great deal of time spent in activities necessary to get the substance, take the substance, or recover from its effects
4. Frequent intoxication or withdrawal symptoms when expected to fulfill major role obligations at work, school, or home, or when substance use is physically hazardous
5. Important social, occupational, or recreational activities given up or reduced because of substance use
6. Continued substance use despite knowledge of having a persistent or recurrent social, psychological, or physical problem that is caused or exacerbated by the use of the substance
7. Marked tolerance: need for markedly increased amounts of the substance (at least

50% increase) to achieve intoxication or desired effect, or markedly diminished effect with continued use of the same amount

8. Characteristic withdrawal symptoms
9. Substance often taken to relieve or avoid withdrawal symptoms

**B. Some symptoms of the disturbance have persisted for at least 1 month or have occurred repeatedly over a longer period of time.**

**II. Abuse**

**A. A maladaptive pattern of psychoactive substance use indicated by at least one of the following:**

1. Continued use despite knowledge of persistent or recurrent social, occupational, psychological, or physical problems that are caused or exacerbated by use of the psychoactive substance
2. Recurrent use in situations when use is physically hazardous

**B. Some symptoms of the disturbance have persisted for at least 1 month or have occurred repeatedly over a longer period of time.**

**C. Never met the criteria for psychoactive substance dependence for this substance.**

personality disorders of the antisocial or borderline type. Psychological and personality characteristics of drug-abusing persons most often have been reported as impulsive and novelty seeking.<sup>39</sup>

Social maladjustment and environmental deprivation likewise are significant as determinants of substance abuse. This finding is more true with polydrug abusers.<sup>40</sup>

**Environmental Determinants**

Substance abuse like any other behavior is the product of an individual interacting with his environment. In any organizational management of substance abuse, it is therefore essential to understand the environment in which the disorder occurs. The military environment has its unique stressors, which

are experienced by all but to which each soldier's reaction differs depending on individual strengths. Young soldiers tend to face insurmountable obstacles to a sense of personal identity and unit affiliation by the high level of turbulence in the units, the geographical separation from friends and family, and the psychological isolation from officers, noncommissioned officers, and the surrounding community.

Excessive drinking has been associated with military personnel, and active duty has been considered to be a high-risk occupation for alcoholism. That the military environment contributes to alcohol use and abuse has been frequently cited.<sup>1,2,3,17,19</sup> Studies have also indicated little change in patterns of alcohol use over the years.<sup>3</sup> In a survey among military personnel, there was a definite relation between

stress at work and alcohol consumption.<sup>26</sup>

It has been noted that the pattern of substance use among soldiers is determined less by pharmacological and personality variables and more by the circumstances, such as substance availability, peer pressure, and need for affiliation in an environment in which social supports tend to be lacking and in which loneliness and isolation abound.<sup>41,42</sup> Drugs have been used as a way of “bolstering self-esteem through identification with a group, to reduce anxiety, and to provide themselves with an interpersonal relationship.”<sup>43(p448)</sup>

Combat, the most significant stressful situation in the military, generally tends to increase substance use. A study of veterans of the Korean and Vietnam conflicts indicated “a significant association between combat exposure and excessive alcohol use.”<sup>44(p572)</sup> Many veterans of the Vietnam conflict began using heroin during their tour of duty for relief of fear and tensions of war. Abuse of heroin, cannabis, and alcohol by combat soldiers was not usual while in the field in close proximity with the enemy but rather was usual while back at the fire base or on rest and recreation. Apparently, the desire for survival mobilized peer pressure to keep soldiers alert while on patrol. For other soldiers, boredom and the lack of meaningful activity contributed to substance use.<sup>45</sup>

### **Availability**

There can be no widespread substance abuse without its availability. This situation was clearly

demonstrated during the Vietnam conflict when the use of narcotics dramatically increased due to its availability and low cost. In addition, many who were regular drinkers, including some who had drinking problems, switched to opiates and then became opiate dependent. After the Vietnam conflict, opiate use decreased, and alcohol use again became ascendant.<sup>46</sup> A study of soldiers returning from the Republic of Vietnam (RVN) in 1971 disclosed “less than 1% ever addicted to narcotics before arrival in RVN; while in RVN, 1/2 of them used narcotics and 1/5 reported opiate addiction. After their return to the US, usage and addiction decreased to pre-Vietnam levels.”<sup>47</sup> Similarly, the 1990 to 1991 Persian Gulf War saw an absence of alcohol problems because of strictures against importation of alcohol into Islamic countries.

### **Organizational Determinants**

The level of stress present within the unit impacts on its members significantly. As a result of leadership difficulties or organizational problems, the soldiers in the unit can experience a significant amount of discontent, frustration, and poor morale. Problems in behavior among the troops rise significantly, and substance abuse rates tend to rise accordingly. Therefore, in any situation in which significant substance abuse is determined, a command consultation with the unit is indicated, and organizational functioning needs to be assessed. Primary preventive measures could significantly reduce the abuse rates in dysfunctional units.

## **CURRENT THEORIES**

### **Biopsychosocial**

Soldiers may take substances for many reasons. These reasons include curiosity, peer pressure, and the desire to diminish dysphoric feelings or experience euphoriant feelings. Drug use among young soldiers is generally experimental and tends to be confined to social situations that often provide a focus for group interactions and identity.<sup>1</sup> This type of substance use is quite different from regular use or dependence.

Today, the biopsychosocial theory is the dominant concept in alcoholism. The theory postulates that certain susceptible individuals are more likely to develop alcohol dependence because of biological (genetic), psychological, (depression),

or social (peer influences) predispositional factors. Stressful life events or psychological conditions (anxiety, insomnia, depression, and so forth) precipitate increased drinking, and the drinking becomes progressive as alcohol in these susceptible individuals provides relief by producing euphoria or alleviating the dysphoria. As a consequence, primary psychological dependence is developed resulting in tolerance. Physical dependence follows with the need to drink to prevent withdrawal symptoms. The established addictive cycle is then intensified by the protracted abstinence syndrome with persistent psychological craving. Even after a period of abstinence, and this period can last many years, because the physical dependence mechanism remains, the ad-

dictive behavior becomes reactivated by alcohol ingestion.<sup>39</sup>

### **Subtypes of Alcoholism**

Military experience has indicated that alcoholism is manifested in different ways among soldiers. What is frequently seen among the younger soldiers is not the same as what is seen with older soldiers. Studies<sup>31,39</sup> of families with alcoholism and adoption studies<sup>28,39</sup> have clarified these impressions by the determination of two clinical subgroups of persons with alcoholism that differ in their genetic and environmental backgrounds.<sup>28</sup> These subtypes imply different approaches for the management and the treatment of alcoholism in the military.

Type 1 alcoholism is the classical alcohol-dependent person with a loss of control and the compulsion to drink. Type 1 alcoholics are generally anxious or passive-dependent and drink to relieve the anxiety. They may experience prolonged and severe depressive responses to separation or loss of social attachments. For this group, mild or severe alcohol abuse occurs after the age of 25 years, and tolerance and dependence develop rapidly on drinking. They tend to display recurrent binges, guilt about drinking, and liver disorders. The disorder is

more often familial than with Type 2, often with both their parents having a similar pattern. There is little or no criminality. Because of the loss of control and prominent psychological dependence, the treatment goal should be a total, lifelong abstinence. Supportive social relationships and appropriate means of relieving anxiety are also essential for recovery.<sup>28</sup>

Those with Type 2 alcoholism are typical alcohol abusers, characterized by the onset of moderate alcohol abuse during their teenage years (before the age of 25). They drink to seek stimulation and pleasure and present a history of frequent criminality with arrests, suicidal acts, and other acting-out behavior. Generally, there is a history of an early onset of alcohol abuse and criminality in their biological fathers. Antisocial personality characteristics are common with impulsive and aggressive behavior. They tend to be risk takers who abuse a variety of substances in addition to alcohol. The alcoholism is manifested by an inability to abstain, fighting while drinking, and drinking and driving recklessly. Women seem less at risk for the Type 2 alcoholic disorder than do men. Treatment should be heavily directed toward seeking other ways to obtain stimulation and pleasure, that is, physical activities in addition to developing self-control.<sup>28</sup>

## **IDENTIFICATION**

Substance abusers are quite unlike the usual patients that a physician sees in two major respects. First, the typical medical patient is motivated by his distress and discomforts to seek relief. The drug abuser does not consider himself ill or his activity undesirable. It is only when he suffers from intoxication, withdrawal, or other effects of substance use that he is brought to medical attention, and then usually as a referral by his commander. Second, although the treatment of the physical effects of substance use is a medical responsibility, the treatment of the substance use disorder (rehabilitation) is a command responsibility.

Unlike with most other medical disorders, the pervasive existence of denial among substance abusers maintains the drug use and perpetuates the disorder. The motivation for recovery is often provided by the threat of career termination because the military services have considered continued substance abuse to be incompatible with military service.

Biochemical testing is used widely within the military services for the detection of alcohol and

drug use. For alcohol, breathalyzers are a rapid means of ascertaining the level of blood alcohol present for treatment purposes; however, whenever a need arises for a legal determination of blood alcohol concentration (BAC), a laboratory analysis of the blood sample is necessary, utilizing proper procedures and a chain of custody. Usually, commanders have the authority to order such testing.

### **Urinalysis**

Urinalysis testing is useful for detecting substance use such as cannabis, cocaine, amphetamines, phencyclidine, barbiturates, and opiates. Testing is done under strict procedures to minimize administrative errors because a soldier's career may be determined by its result. Commanders often utilize random urine testing for drugs. For both alcohol and drugs, commanders have the prerogative of ordering testing whenever there is a suspicion of use or impairment.

The physician plays a key role in the evaluation of all confirmed laboratory tests because prescribed drugs can give an erroneous impression of abuse. The physician assesses all available data, including medical records, examines the subject, and renders a diagnosis and recommendations. It is important that physicians work closely with the commander in obtaining all pertinent information before any final decision is made that the individual is or is not a substance abuser. To assist the physician, questionnaires such as the Michigan Alcoholism Screening Test (MAST)<sup>48</sup> and the CAGE<sup>49</sup> (Have you tried to Cut down? Are people Angry when you drink? Do you feel Guilty about drinking? Do you take an Eye-opener in the morning?) are available and easily administered and scored.

A proper diagnosis of substance abuse disorder is essential in ensuring proper intervention, treatment, and follow-up. The physician should be objective in considering the needs of both the individual and the organization rather than "protecting" the person, as sometimes occurs. In addition, the primary concern of all professionals should be to encourage substance abusers voluntarily to seek assistance and to eliminate those factors that prevent this assistance.

### **Medical Screening**

An important means of detection is available to the physician attending to "sick call." Conditions such as hepatitis, recurrent Monday "flu" syndromes, and gastritis may indicate substance abuse. Alcohol misuse can aggravate almost any of the routine complaints and findings seen in the everyday practice of medicine, particularly neurological, gastrointestinal, and cardiorespiratory symptoms. Physicians should always consider substance abuse in any recurrent or nonspecific medical conditions and recurrent injuries.

### **Commander's Suspicion**

For commanders, the usual means of identifying alcoholism is based on performance criteria such as

absenteeism, tardiness, personality changes, disinterest, argumentativeness, accidents, and sickness. This is true largely in the lower enlisted ranks. Among the higher enlisted ranks and officers, impairment is quite subtle and less conspicuous. Therefore, identification is more difficult. Here, a recognition of longer lunch breaks with a smell of alcohol on the breath may be a clue to an alcohol problem. Identification based on performance becomes an especially difficult task. The performance requirements of jobs differ, and the higher status jobs allow more variation in work performance. Furthermore, the senior service member has less immediate supervision, more privacy, and more opportunity to set his own pace and hours, and there are fewer opportunities for accidents. In addition, there is less social distance and more collegiality between the higher enlisted ranks and officers and their supervisors. These supervisors are often reluctant to acknowledge that a problem exists.

Within the DoD, any person having a blood alcohol level of 0.05 percent while on duty is considered impaired and should not continue to work. "Alcohol is a primary and continuous depressant of the central nervous system. In persons intolerant of alcohol, impairment of judgement and of recently learned, complex, and finely tuned skills begins to occur at BACs as low as 5.4 mmol per liter (0.025 percent), followed by the loss of more primitive skills and functions, such as gross motor control and orientation, at concentrations in excess of 11 mmol per liter (0.05 percent)."<sup>50(p456)</sup>

For troops in combat or in the field, the problem is especially critical as impairment in information processing occurs even at minimal blood levels. The ability to abstract and conceptualize is diminished along with the cognitive ability to interpret incoming information. The soldier is also less able to appreciate the potential danger or the negative consequences of a particular action because alcohol tends to cause him to act impulsively.<sup>50</sup>

## **TREATMENT**

For many years, alcoholism as a treatable condition was ignored by the military as well as by the medical community. Little was known then of alcoholism as a disease. While great strides have been made in its understanding, much more needs to be

understood of its mechanisms and phenomena in order to develop more effective treatment.

In the past, while the military had a variety of mechanisms for handling alcoholic dereliction of duty, it lacked treatment programs. As a result, the

soldier's denial was echoed by the military because commanders seldom wished to terminate what had been a promising career. Soldiers with confirmed alcoholism were put in the same category as those with mental deficiency or psychopathic state, and they were considered to be constitutionally handicapped. "Their separation from the army under the appropriate administrative regulation was in the best interest of the soldier and the service."<sup>51(p590)</sup>

Alcoholism was considered a result of willful misconduct, and the punitive approach was the usual means of management. However, medical personnel felt that treatment should be offered to the afflicted soldier rather than punishment.

Alcoholism was a difficult problem. There was often doubt whether a "drunk" belonged in the local guardhouse or in the hospital, where possible intracranial injuries for example, could be detected. A compromise solution was reached when one of the neuropsychiatric closed wards was assigned to care for such problem personnel. Acute alcoholics were admitted to this ward and then transferred to the guardhouse if no medical disorder existed. This was in accord with Army policy that regarded alcoholism as misbehavior rather than illness."<sup>52(p814)</sup>

For those fortunate enough to be placed on the psychiatric service, alcoholism was invariably considered to be a symptom of some underlying psychiatric disorder. Even so, long-term treatment of such a condition was unavailable in the services.

Although there was some early work done in the hospital treatment of alcoholics at various military treatment centers,<sup>3</sup> it was only after 1970 that a clear policy had emerged in abandoning the willful misconduct concept and that took a more humanitarian and therapeutic approach. The U.S. Army initiated its ADAPCP in 1971 on a congressional mandate.<sup>53</sup> The program approach was in large part a result of the policy of conservation of manpower because senior noncommissioned officers and officers represented a considerable financial and experiential investment by the military. The military services could not afford the constant replacement of highly skilled service members and the ongoing toll of impaired performance and hazards associated with substance use.<sup>17</sup> It had been clearly shown previously<sup>26</sup> that substance use correlated highly with the occurrence of physical symptoms, social disruption, and the deterioration of work performance. Providing treatment favorably affected health and performance.<sup>54</sup>

An effect that may not be as important in other settings but is highly significant within the military

setting is that the use of a substance has the potential of modifying the relationships existing in small groups.<sup>55</sup> Drug use can be disruptive to unit cohesion because it can fragment the unit into disparate groups. The unit cohesion that is so vital in sustaining the soldier in battle can be compromised.<sup>56</sup>

Since the inception of treatment as an alternative in the management of substance abusers, programs have been made available in each military installation. The thrust has been along voluntary treatment and early intervention. Both outpatient and inpatient modalities are available and current programs match the intensity of treatment to the needs of the patient at hand. The current treatment policy is more favorable in the military for those with alcoholism. There is less tolerance for other substance abusers.<sup>3</sup>

### **Triage**

The ADAPCP in the U.S. Army is a command program.<sup>57-59</sup> By this policy, the commander makes the decision of whether the soldier should receive rehabilitation for his substance abuse disorder. Unlike other treatment, the medical officer can recommend, but the commander makes the final decision. Generally, the commander bases his decision on the soldier's performance and his potential for further active duty, that is, the soldier's past and future contributions to the military.

The treatment of the effects of drugs and alcohol as they are manifested physically is a medical responsibility. However, once the condition stabilizes and the soldier is no longer in danger, the commander decides on whether the soldier receives rehabilitation or administrative action, including separation.

As indicated previously, substance abusers can generally be divided into the two types. Within the military, this division can be done quite easily. Considering the differences in characteristics and symptomatology, the treatment implications are enormous. Soldiers of the Type 1 group will be considered more likely to have the disease of alcoholism and thus benefit from the medical approach, that is treatment in the residential treatment facility (RTF). Soldiers of the Type 2 group would receive only limited benefits from the purely medical approach. Their management should include a significant command approach, utilizing discipline, structure, training, and administrative action.

Although there are exceptions, with a large proportion of the military population being less than 25

years old, it appears that a great majority would fall into the Type 2 group with the diagnosis of alcohol abuse. Occasionally, soldiers referred for alcohol intoxication or an alcohol-related incident may not fit into the DSM III–R criteria for alcohol abuse. This also occurs with some soldiers who test positive on urinalysis for substances. In these cases, because no definitive diagnosis can be made, the soldier is considered to have used the substance improperly. He is therefore enrolled into the education program, usually for a 30-day period. The staff may use this time to further observe and evaluate the soldier.

### **Treatment Strategies**

Although soldiers entering into a treatment program, whether outpatient or RTF, have different degrees of the disorder with differences in need, they all require restoration and changes in their basic behavior to pursue recovery. Within the substance abuse field, there is yet no cure. For many, abstinence is the goal, and recovery is a lifelong task. The strength of one's recovery program minimizes the slips and relapses. Treatment strategies emphasize various means to avoid drinking, including taking disulfiram and attending Alcoholics Anonymous (AA) meetings. Strategies are also directed to repairing social and medical problems, restoring hope and self-esteem, and developing new interests and associations.<sup>36</sup> The establishment of a new social network along with substitute behavior is also critical.

For treatment to be effective, a comprehensive approach is necessary. Every area of the patient's functioning should be assessed and addressed because these individuals display multiple impairments by the time they come to treatment. These are behavioral difficulties, psychological disturbances (mood and affect), social-interpersonal impairments, and physical and cognitive dysfunctions. In addition, the adverse effect on work performance and legal difficulties, if any, need resolution.

When an abuser enters treatment, the outcome is largely dependent on the service member's motivation to remain in the service by giving up the use of substances of abuse. A service member must not only comply with the treatment plan in terms of attendance and participation, but he must demonstrate an actual change in attitude, abstention from substance abuse, and a satisfactory duty performance. With readiness for duty as the policy in the military, service members not motivated for reha-

bilitation are expeditiously separated. These individuals are, however, given the opportunity for treatment at a Veterans Administration medical facility within 30 days of separation.

### **Outpatient**

The outpatient treatment modality is the first treatment intervention. The usual entrance reason is an alcohol-related incident. A psychoactive substance use disorder<sup>60</sup> diagnosed by medical personnel following a comprehensive clinical assessment is necessary for enrollment. The outpatient program usually consists of weekly group counseling sessions and individual sessions as necessary. Treatment plans also include AA participation and disulfiram as indicated. Narcotics Anonymous (NA) and Cocaine Anonymous (CA) may be utilized when substances other than alcohol are abused. Periodic urinalysis is also utilized to discourage the substitution of other psychoactive substances. The commander enrolls the soldier into the program on the recommendation of the professional staff. For the duration of the soldier's treatment, there is active collaboration with command. The commander provides the direction, structure, and limits that are necessary in rehabilitation. The program is especially suited for the young soldier who abuses alcohol.

### **Residential Treatment Facility**

Inpatient treatment of alcoholism and other drug dependence is conducted in one of the many military RTFs. For those soldiers that are alcohol- or drug-dependent by DSM III–R criteria, it supplements and augments outpatient care. It is a hospital-based program of intensive therapy, lasting 4 to 6 weeks and followed by outpatient treatment for the next year. Community living milieu and intensive group therapy to overcome denial and to effect lifestyle changes are heavily utilized. Counseling and education with intensive AA/NA participation are included. If not medically contraindicated, disulfiram (Antabuse) is encouraged as an adjunct to treatment. Because of the effect of family dynamics in the treatment process, family issues are addressed and many programs include spouses and other codependents to support the rehabilitation of the individual and to prevent further enabling.<sup>3</sup> It is an intensive but time-limited recovery program with abstinence as its goal.

To continue the recovery process initiated in the RTF, at the time of release, a sound aftercare plan is prepared. The service member is referred back to his own military community's outpatient facility for continued care according to its outpatient format (ie, weekly counseling sessions, disulfiram therapy, and AA attendance) for the next year. Commanders are involved in the aftercare, and their support is considered essential for the service member's return to duty, compliance with treatment, and ultimately assurance of adequate rehabilitation. The year of aftercare is a probationary period during which a service member is stabilized

geographically in his unit and reenlistment contracts cannot be negotiated. This is to maintain the continuity of treatment at one location as well as to allow the commander the continued assessment of the soldier. Adequate medical follow-up is also necessary during this period because of the recurrent medical problems that many alcoholics have developed over the years. In addition, because of the tendency to substitute other drugs for a previous alcohol dependency, the physician should be acutely sensitive to the use of medications by the soldier for any reason. It may be necessary periodically to subject the soldier to random urinalysis.

## MANAGEMENT OF CLINICAL CONDITIONS

Of importance in the treatment and management of substance-induced disorders is an understanding of the disorder and its psychosocial aspects. Proper treatment utilizes the various psychiatric treatment modalities, including both pharmacologic and psychosocial approaches. The goal is to restore the soldier's functioning in the military milieu and correct any performance deficits. Appropriate management utilizes the support of the community, family, unit, and organization to optimize recovery. Essential in the management is the understanding of the soldier's personality and circumstances that led to the disability or illness.<sup>61</sup>

Two frequently encountered complications seen among soldiers are alcohol- or drug-induced intoxication and psychoses. Intoxications are acute disorders that require immediate treatment. The psychoses may be acute or chronic. The withdrawal delirium is one type that requires immediate intervention.

The standard treatment for psychosis differs in the treatment of the substance-induced psychotic disorders; however, both may include the use of neuroleptics and appropriate supportive measures. Elimination of the toxic substance and correction of metabolic diatheses is of paramount emphasis in substance-induced psychoses. The treatment of alcohol intoxication and alcohol delirium will follow. The measures utilized in these disorders can be utilized in similar conditions that are drug-induced.

### Alcohol Intoxication

Among the troop population, intoxication plays a major role in the morbidity and mortality associated with accidents, homicide, suicide, and medical and surgical conditions. Intoxication or drunken-

ness should not be confused with alcoholism. It is seen in both alcohol abuse and alcohol dependence. Intoxication is often defined, especially in relation to driving offenses as a BAC of 100 mg per 100 ml of blood.

A standard drink—defined as 44 ml (1.5 oz) of distilled liquor (80 proof, or 40 percent alcohol by volume), 360 ml (12 oz) of beer (5 percent alcohol) or 150 ml (5 oz) of wine (12 percent alcohol)—contains about 15 g of alcohol, and in a 70-kg person the ingestion of one such drink will result in a peak blood alcohol concentration of approximately 4.3 to 8.7 mmol per liter (0.02 to 0.04 percent), depending on the rates of ingestion and absorption. Alcohol is metabolized and eliminated from the body at an average rate of about 8 g per hour; thus, for each standard drink consumed, approximately two hours are required for the blood alcohol concentration to fall to near zero, though slow rates of absorption may prolong the tail of the elimination curve beyond two hours.<sup>50(p456)</sup>

Sporadic, deliberate intoxication and voluntary heavy drinking (drunkenness) must be distinguished from the disease of alcoholism or alcohol dependence. Drunkenness is usually a hallmark of an alcohol abuser, but a history of repeated episodes points to dependence.

Alcohol intoxication varies in degrees and may be associated with abuse of other substances. Usually, the pure alcohol intoxication tends to be uncomplicated, and recovery is fairly rapid. Because of the social and other supports that are not available in barracks living, soldiers are often hospitalized briefly to avoid any unforeseen complications and to ensure safe recovery.

The usual signs of intoxication are slurred speech, nystagmus, hyporeflexia, unsteady gait, incoordi-

nation, flushing, somnolence, and drowsiness. A strong alcoholic breath is usually apparent but may be absent if unperfumed vodka has been ingested. Effectively treated with bed rest, recovery is fairly rapid. To control excitement or violence, careful restraint may be needed. The use of medications is controversial because deaths have occurred with additional sedation and important neurological signs may be masked.

Severe intoxications (alcohol overdose) present potential respiratory, cardiovascular, and central nervous system complications, including coma. There is also the possibility of unpredictable behavioral manifestations. Because the primary approach to the management of these individuals is life support, these cases should be managed in the hospital intensive care unit.

Severe intoxication is seen most often among young soldiers in a foreign country who, unfamiliar with the alcohol content of the local beverages, consume a significant quantity in a short period of time. It can also occur in binge drinkers who drink enormous quantities of alcohol rapidly. Because drugs may also be involved, it is necessary to obtain not only a BAC but also a drug screen. Because identification of the specific substances may not be immediately available, familiarity with substances available in the local community is helpful. An example in South Korea is Soju, a beer with a high-alcohol content.

Optimal management and treatment presuppose that the clinician has a clear appreciation of the clinical situation, including an adequate history and physical examination. Appropriate laboratory support is also essential. However, when a soldier is brought in by the military police or by ambulance, reliable and accurate information may be lacking. It is often necessary to start treatment immediately on a high index of suspicion as to the psychoactive substances involved.

### *Case Study 1*

A 20-year-old serviceman with 8 months of active duty was brought to his medical treatment facility by the military police for treatment of a head laceration following his apprehension for fighting at the club. When seen, he was intoxicated with a BAC of 0.15 mg% of alcohol and was hostile and belligerent. For the treatment of his wound and for observation, he was admitted into the base hospital. He recovered from the incident uneventfully over the next day. Past history indicated that he had been drinking for the past 5 years and was apprehended a year ago for driving while intoxicated. He entered the army at the

insistence of his parents and because he had no job. Since arrival at his unit, he has had two incidents of fighting while intoxicated and was charged twice for disobeying orders. He had also tested positive for cannabis a month ago. On release from the hospital, he was enrolled in the outpatient program by his commander. Attendance at the group sessions was erratic, and when he attended, he minimally participated. When confronted, he became hostile and defensive. He refused disulfiram, allegedly because he had no intention of quitting alcohol. A repeat of his urine drug screen a few weeks later again was positive for cannabis. Because of his failure to benefit from treatment and the continued use of an illegal substance, he was disenrolled from the program by his commander and separated administratively from the service.

Comment: Soldiers who have had alcohol and drug problems before entering on active duty often experience a relapse during their term of service. Motivation for treatment is perhaps the best predictor of success. The individual in the above case study had no motivation to stop drinking.

### *Case Study 2*

A 21-year-old serviceman with 2 years of active duty was brought to the base dispensary after he passed out at the local bar. He had been in Korea a week when he decided to try the clubs with his fellow soldiers. At their insistence, he had two bottles of Soju, a Korean drink, and four bottles of beer over a period of 2 hours. When seen at the hospital, he was drowsy but responsive. BAC was 0.25 mg% for alcohol. He was admitted into the hospital for observation. The recovery was uneventful, and he required no medications. Continued observation indicated no emergence of tremors or withdrawal symptoms. Additional history indicated that the patient had been drinking for the past 4 years and that at his last duty post he had been cited for driving while intoxicated. He usually drank on weekends with fellow soldiers and had been drunk on several occasions at parties. Following his release from the hospital, he was enrolled in the outpatient program by his commander because he was generally considered a good soldier. He received weekly group counseling, attended the local AA meetings, and complied with the program requirements for the 6 months of his enrollment. During treatment, there was active command collaboration and consultation. The soldier was well aware of potential administrative action, including separation, should he fail to progress in the program. He successfully completed the program and remained free of any alcohol-related incidents for the next year when he was honorably discharged on his expected termination of service.

Comment: The above case study illustrates a successful outcome of a soldier placed in the outpatient treatment program. It is estimated that 60% of those enrolled in the outpatient program are successfully rehabilitated.<sup>62</sup>

### **Case Study 3**

A 42-year-old Sergeant First Class returned from deployment to Panama to find his wife had begun having an affair with a neighbor and wanted a divorce. The soldier, originally from New York City, returned home on leave to be with his family of origin for support and solace. On a dare, he used crack cocaine and noted that this drug helped with his feelings of dysphoria surrounding the breakup of his marriage. When he returned to his duty station, the soldier moved to an apartment in town and began using crack cocaine on a regular basis. His work performance declined and he tested positive on a random urine drug screening.

During his referral to the ADAPCP, a psychiatric evaluation confirmed the presence of an adjustment disorder with depression. He readily engaged in outpatient counseling and his command began processing his separation.

The soldier received 8 months of drug abuse counseling before being separated from the service. One year after separation, he was still doing well and had found another job in the defense industry.

Comment: Despite the regulation that mandates separation because of drug use, soldiers can still receive benefits from evaluation and treatment while awaiting separation.

### **Alcohol Withdrawal**

The objectives in treating alcohol withdrawal are the relief of discomfort, prevention or treatment of complications, and preparation for rehabilitation. Withdrawal symptoms usually occur in persons that have developed tolerance and are alcohol-dependent in contrast to abusers of alcohol. Withdrawal syndromes are usually seen in situations of voluntary abstinence, in treatment centers where the soldier is being treated for an intercurrent disease or trauma, in custody of military police, or during troop movements. Although cessation of drinking is the usual cause of the emergence of the withdrawal syndrome, it can be precipitated by reduced consumption or by any intercurrent illness, particularly infectious diseases. Because of inability to control their drinking, these individuals may display impairments in performance, and social relations, legal difficulties, and medical complications.

In the case of depressant drugs (alcohol, barbiturates, sedatives, or hypnotics) untreated withdrawal can be lethal. With narcotics, the withdrawal, although uncomfortable, is seldom lethal in a healthy individual.

Good management requires an adequate knowledge of the overall medical condition of the patient. Before withdrawal, medical conditions should be stabilized, including dehydration, infections, or trauma that requires treatment.

Detoxification is the first step in the treatment of addiction; the ultimate goal is recovery through a continuing treatment program. It should be performed in an adequate treatment setting, preferably a hospital setting, because convulsions and delirium can occur. Symptoms of withdrawal can begin as early as 8 hours or as late as 72 hours after the last drink. Information useful in the treatment of the alcohol withdrawal syndrome is the drinking history (duration, amount and pattern to ascertain the degree of tolerance, and blackouts), the history of signs and symptoms of physical dependence, (early morning shakiness, nausea, and nightmares relieved by drinking), and the manifestations of previous withdrawal, particularly DTs and seizures.<sup>61</sup>

The withdrawal syndrome ranges from mild to severe. The mild withdrawal syndrome is usually self-limited, resembling a hyperadrenergic state. It is manifested by anxiety, tremors of hands, diaphoresis, tachycardia, systolic hypertension, mild nausea, and sleep disturbance. It typically appears within 12 to 24 hours after the cessation of drinking, and the duration is usually 3 to 4 days.<sup>61</sup> Many of these patients require only observation, reassurance, and comfort with little or no medication. When in the field, these cases can best be managed in a setting that can render supportive care, such as hydration, nutrition, rest and sleep, reassurance, and orientation. However, for those that have a long history of drinking and evidence of dependence, this may be risky because they can easily progress in symptomatology and there is more risk of complications.

The severe form of withdrawal, with DTs is characterized by a symptom complex of profound confusion, disorientation, hallucinations, agitation, and autonomic hyperactivity. It appears 3 to 4 days after the cessation of drinking and resolves in the next 5 days with adequate treatment. The dangers are hyperpyrexia, dehydration, and electrolyte imbalance.<sup>36</sup>

The withdrawal syndrome requires prompt treatment and continual close attention to avert complications. The possibility of simultaneous withdrawal from other drugs should always be considered. For this reason, serum or urine drug screen as well as corroborative information is essential for proper management. Besides DTs, the other complications are seizures, dementia, and hallucinosis. The amount of medications needed to control withdrawal varies greatly among patients. Although many sedative-hypnotic drugs have been used to treat the withdrawal syndrome, the long-acting benzodiazepines, chlordiazepoxide and diazepam are currently the most widely used.<sup>62</sup> These benzodiazepines have

the advantage of being cross-tolerant with alcohol, and their long half life is usually an advantage. Model detoxification procedures are described in Exhibit 5–2.<sup>63,64</sup>

The usual detoxification procedure calls for the administration of adequate doses of benzodiazepines. For mild to moderate withdrawal, the patient is initially given 50 to 100 mg of chlordiazepoxide or 5 to 10 mg of diazepam by mouth or intravenously. Close observation with attention to the signs of withdrawal and subjective complaints guide the use of additional medications.<sup>36</sup> Objective findings to monitor are sweating, hyperreflexia, tachycardia, confusion, agitation, body temperature, and blood pressure. A flow sheet monitoring the patient's condition and medications given greatly aids in management. The Clinical Institute Withdrawal Assessment for Alcohol (CIWA–A) is a reliable instrument that is available to assess the severity of alcohol withdrawal.<sup>65,66</sup> Withdrawal symptoms are rated, and the scores are helpful in titrating medications. Healthcare workers can be easily taught this scale to assess symptomatology and to monitor progress. However, the clinical evaluation still takes precedence over any test or scale in the final analysis of the treatment.

Following the adequate administration of the benzodiazepine during the first day or two, subsequent doses can be reduced rapidly because of the long half life of the drug. Uncomplicated detoxification is usually accomplished in 3 to 6 days.

The most severe type of withdrawal, DTs, requires the closest medical attention. In these cases, diazepam intravenously is often used; 10 mg may be given initially, followed by 5 mg every 5 minutes until a calming effect is achieved. Because diazepam and its major active metabolite have very long half lives (about 36 hours), additional medication may not be required. Persistent hallucinations, delusions, and agitation may require neuroleptics.

The absorption of diazepam in intramuscular form is quite unreliable, and therefore, patients should be given oral diazepam or chlordiazepoxide as soon as they are able to tolerate oral medications.

Combined treatment involving a benzodiazepine and a sympathetic blocking agent, such as clonidine, is emerging as a means of enhancing the effects of the standard benzodiazepine therapy of alcohol withdrawal.<sup>29</sup> Clonidine alleviates the hyperadrenergic state but does not protect against seizures.

Antipsychotics are not indicated for the treatment of withdrawal unless hallucinations, delusions, or severe agitation persist, in which case they

should be added to the benzodiazepine. Haloperidol is often used for this purpose, but care should be taken to prevent extrapyramidal syndromes including neuroleptic malignant syndrome.

### **Abstinence Syndromes**

Abstinence syndromes include acute alcohol withdrawal described above and other symptoms that can be protracted. These chronic symptoms point to a persistent hyperadrenergic state that may last 6 to 12 months. Persistent insomnia, anxiety, and depression can contribute to the risk of relapse by tempting the patient to seek relief with alcohol. Electrophysiological evidence for the existence of protracted abstinence in detoxified alcoholics has been demonstrated.<sup>39</sup> Alcohol consumption by an abstinent alcoholic may elicit withdrawal-like symptoms because of persistent latent central nervous system hyperexcitability. In some alcoholics with persistent hyperadrenergic states, antidepressants have proved useful.<sup>67</sup>

### **Drug Abuse**

Abusers of illegal substances are not tolerated in the military and therefore are less often the subjects of treatment. However, the military drug and alcohol clinics do provide outpatient treatment to the lower enlisted personnel for those who abuse substances other than alcohol. Senior enlisted personnel and officers are often processed for separation because they have undermined a public trust.

Withdrawal from amphetamine and cocaine usually causes some physical distress but is self-limited. Life-threatening events are usually associated with use including fatal arrhythmias, seizures, and cerebrovascular accidents. A drug-free environment, symptomatic treatment, and psychological support are usually sufficient. However, suicidal depressions and paranoid psychosis may be manifested or emerge on withdrawal, requiring vigorous psychiatric care. Because of the usual severe underlying social and personality disorders encountered in drug abusers, treatment is necessarily complex and prolonged. A narcotic withdrawal procedure is described in Exhibit 5–3. The withdrawal from sedatives and hypnotics is very similar to that from alcohol, and the same procedure is applied with some modification. Exhibit 5–4 describes the procedure.

Withdrawal from cannabis (marijuana, hashish) is usually uncomplicated, requiring no medical intervention. Similarly “coming down” from a hallu-

## EXHIBIT 5-2

### MODEL ALCOHOL WITHDRAWAL PROCEDURE

- I. Purpose: To prevent medical and withdrawal complications such as organic brain syndrome, vitamin deficiency, neuropathic and encephalopathic disease, and aggravation of existing medical problems. Withdrawal symptoms can begin within hours of the last drink but may not emerge until up to 7 days.
- II. Medications: All medications, if possible, should be given orally to avoid activating psychological needs and symbolism of injections. Doses are based on the average (70 kg) person. Higher or lower amounts should be based on actual physical status.
- A. Vitamins: Initially it is important to start the debilitated patient on parental vitamins (ie, thiamine HCL,<sup>1</sup> Berocca parental nutrition) immediately on admission to avoid the possibility of one of the permanent organic brain syndromes or peripheral neuropathies. However, if oral intake is adequate, high doses of oral vitamins should be used for the first week. After that, an adequate diet should suffice.
1. Berocca parental: 4 ml intramuscular (IM) (for 1 or 2 doses).
  2. Vitamin K: 5 to 10 mg IM (for 1 or 2 times if prothrombin time is prolonged more than 3 seconds beyond the control).
  3. Thiamine HCL: 100 mg IM. Start P.O. vitamins as soon as possible.
  4. Ascorbic acid: 500 mg per day.
  5. Pyridoxine HCL: 100 mg per day.
  6. Folic acid: 1 to 5 mg per day x 5 days.
  7. Multiple vitamins: 1 twice per day.
  8. Thiamine: 100 mg 3 times per day.
- B. Tranquilizers: Type should be based on several factors of which physician's experience, drug, and patient characteristics are of paramount importance. These can be used during the first few days of detoxification if needed. Care should be taken not to overuse tranquilizers or other sedatives in the acute intoxication phase or with markedly elevated alcohol blood levels (eg, 100 to 150 mg/dl or above). Benzodiazepines are the drugs of choice, but major tranquilizers can be used if necessary. If IM benzodiazepines are needed, use lorazepam (Ativan).
1. Diazepam (Valium): Initial loading dose of 5 to 20 mg P.O. every 1 hour until symptom-free and mildly sedated. Usually 1 to 3 doses over 6 hours are needed but may require up to 12 doses over 48 hours. Determination of the need for continue dosing should be made 45 minutes after the previous dose. After symptoms are controlled, no more is needed because of its long half life.
  2. Chlordiazepoxide (Librium): Similar to diazepam but scheduled especially if less sedation is desirable. Doses of 50 to 100 mg every 1 to 1.5 hours.
  3. Lorazepam (Ativan): 2 to 4 mg IM as above if oral medication cannot be tolerated or IM medication is required. 1 mg of lorazepam is equivalent to about 5 mg of diazepam.
  4. Haloperidol (Haldol): 2 to 5 mg oral or IM every 4 hours or more often for persistent psychosis.
  5. Diphenhydramine (Benadryl): 25 to 50 mg IM STAT<sup>2</sup> for EPS,<sup>3</sup> followed by any oral anti-Parkinsonian agent if major tranquilizer is utilized and EPS develops.
  6. Other major and minor tranquilizers can be used depending on clinical experience.
- C. Sleeping medications: Should be avoided. Additional diazepam may be given in some cases.
- D. Anticonvulsive medications: Should not be used routinely but used only if seizures have been a factor in the past. If a severe withdrawal has resulted in seizure-like activity despite diazepam use, the following can be used for 7 to 10 days:
1. Phenytoin (Dilantin): 200 mg IM, then:
  2. Phenytoin: 100 mg, 4 times per day P.O. Do not exceed blood levels of 1 to 2 mg/dl therapeutic range.
  3. Note that even with IM dosing, therapeutic levels usually take several days.

## EXHIBIT 5-2 (continued)

## MODEL ALCOHOL WITHDRAWAL PROCEDURE

E. Antihypertensives: Elevated blood pressure is common in alcohol withdrawal and may revert to normal after detoxification. Aldomet, beta-blockers, and calcium channel blockers may be used for dangerous elevations.

F. Intravenous fluids: Only if severe dehydration, orthostatic hypotension, hemoconcentration, vomiting, or debilitation. The rapid administration of 1 to 2 liters of balanced intravenous fluids with vitamins added, infused over several hours should reduce morbidity.

## III. Laboratory Tests:

- A. Within 24 hours or sooner: Initial blood alcohol, blood sugar, CBC<sup>4</sup> (to include mean blood cell volume, MCV<sup>5</sup>), urine analysis, (including drug screen), liver screen (at least SGOT,<sup>6</sup> SGPT,<sup>7</sup> LDH,<sup>8</sup> alkaline phosphatase, bilirubin, albumin), serology, chest X-ray (posterior, anterior, and lateral). A MCV increase may indicate folate deficiency, liver disease, or reticulocytosis.
- B. Blood antibodies for human immunodeficiency virus (HIV).
- C. Electroencephalogram and electrocardiogram should be done initially only if clinically indicated and are best repeated after 7 to 10 days of return to a fairly normal physiological status.
- D. Other tests to consider: electrolytes (sodium, potassium, chloride), blood urea nitrogen, creatinine, amylase, bromsulphthalein (for hepatocellular damage), fasting and 2-hour

postprandial blood sugar, sputum for culture, and sensitivity.

## IV. Nursing Care:

## A. Vital signs:

1. TPR<sup>9</sup> and blood pressure four times per day for 3 days, then routine. Pulse and blood pressure, supine then after 3 minutes standing, for 48 hours, then routine.
2. Weight: Admission and then 2 or 3 times per week.

B. Diet: Initially patients may need assistance, encouragement, and direction in obtaining an adequate diet.

1. Fluids: Large oral intake is necessary because of various degrees of dehydration. Orange juice is a good source of potassium. Supplemental magnesium may be needed.
2. Supplementary feedings, if indicated.

C. Orientation: Patients should be oriented and familiarized to the unit. Orientation and mental status should be checked and noted daily.

- 
1. HCL—hydrochloride
  2. STAT—immediate
  3. EPS—extrapyramidal symptoms
  4. CBC—complete blood count
  5. MCV—mean corpuscular volume
  6. SGOT—serum glutamic oxaloacetic transaminase
  7. SGPT—serum glutamic pyruvic transaminase
  8. LDH—lactic dehydrogenase
  9. TPR—temperature, pulse rate, respiratory rate

cinogen “trip” usually requires a knowledgeable person to “talk down” the patient and prevent him from coming to harm. Phencyclidine and atropine-like poisoning may require more intensive medical intervention.

*Case Study 4*

A 34-year-old serviceman with 14 years of active duty was brought to the station hospital because he seemed “keyed-up” and restless on duty. He claimed to have had

his last drink 3 days ago. This service member presented a history of drinking the past 18 years. He had previously experienced blackouts or periods of amnesia after drinking. He was hospitalized twice in the last 10 years for alcohol withdrawal symptoms when he was unable to obtain alcohol during field exercises. Following the last withdrawal episode 6 months ago, he was placed in the RTF and was recently returned to duty with follow-up treatment at his local ADAPCP. He discontinued disulfiram a month ago and started to drink because of work stress.

On admission, he was placed on the alcohol detoxification protocol because he was grossly tremulous and

### EXHIBIT 5-3

#### MODEL SPECIFIC SEDATIVE/HYPNOTIC WITHDRAWAL PROCEDURE

Generally, most of the alcohol standing operating procedure applies.

1. Tranquilizer withdrawal: For oral drugs use diazepam. If IM needed, use lorazepam; 1 mg lorazepam equals 5 mg diazepam.
  - a. Loading dose: 10 to 20 mg diazepam or 2 to 5 mg lorazepam IM.
  - b. Maintenance dose: Repeat dose every hour over next 6 to 48 hours until symptom-free and mildly sedated. Determine next dose after 45 minutes of previous dose. Once stability is achieved, no further diazepam is needed because of its long half life.
2. Barbiturate withdrawal: Check for level of tolerance with use of short-acting drug. Thereafter, a long-acting drug can be used for withdrawal.
  - a. Test dose: Pentobarbital. 50 to 200 mg P.O. every 1/2 to 1 hour over 6-hour period to point of intoxication: ataxia, nystagmus, slurred speech. If less than 100 to 200 mg produces intoxication, then a detoxification schedule is not needed.
  - b. Stabilization dose: the 6-hour test dose is given 4 times per day for the next 1 to 3 days. Phenobarbital 30 mg can be substituted for 100 mg pentobarbital and given once or twice per day because of its long half life.
  - c. Withdrawal dose: Decrease 100 mg pentobarb or 30 mg phenobarb, or less, per day over the next 10 to 20 days. If withdrawal symptoms occur, reduce dose more slowly. Consider blood and urine for barb levels and other drugs.

diaphoretic. Over the next few hours, he became increasingly confused, agitated, and aggressive. He displayed disorientation for time and place, felt that he was in prison, and saw "bugs" around the bed. He also felt that he was being poisoned. He loudly insisted that he was innocent and wished to leave. Following a week of hospitalization during which time large doses of benzodiazepine were administered along with haloperidol to treat his delirium, he recovered from the episode with spotty recollection of the events. Because of his poor compliance to treatment

### EXHIBIT 5-4

#### MODEL NARCOTIC WITHDRAWAL PROCEDURES

Procedure is the same as for alcohol, except administer additional medications to control physical symptoms.

1. Narcotic withdrawal: A narcotic antagonist will start the withdrawal abruptly or reverse an acute overdose. Methadone and clonidine can be used to prevent withdrawal symptoms although withdrawal by itself is not life-threatening.
  - a. Acute overdose: Naloxone 0.4 mg IM, intravenously or subcutaneously every 5 minutes until awake. Usually 2 to 3 vials are adequate. Note that the short half life of naloxone requires repeated dosing.
  - b. Initiate withdrawal dose: As above but less frequent to produce physical withdrawal symptoms.
  - c. Methadone dose: This long-acting narcotic can be used for withdrawal.
    - (1) Initial dose: 15 to 20 mg P.O.
    - (2) Withdrawal dose: Repeat dose when symptoms return over 24 hours. Reduce daily dose by 5 to 10 mg per day.

and recurrent drinking, he was administratively separated from the service.

Comment: This is not the typical outcome of those soldiers enrolled in the RTF. The great majority of them are motivated for treatment and respond positively with a successful completion of the program (eg, Case Study 3). However, there are individuals that are unable or unwilling to break through the denial and to confront their disorder. Thus, they end up as treatment failures with their consequences. Because there are no means to clearly predict the patient's response to treatment before admission to an RTF, the first 2 weeks as an inpatient are critical in terms of assessing the potentials for treatment and outcome. Here, commanders are involved in the decision of continuing treatment or not. In most cases, a failure in treatment in the RTF, like a failure of outpatient treatment, leads to an administrative separation from the service.

#### Case Study 5

A 28-year-old serviceman with 10 years of active duty was referred to the base medical treatment facility when his commander noted irritability and an alcoholic breath.

Examination indicated the soldier to be intoxicated with a BAC of 0.10 mg% of alcohol and mild incoordination. He presented a history of drinking since he entered the Army at age 18. He had arrived overseas 2 months previously. Six years ago, he completed the outpatient program following a drinking while intoxicated incident. Knowing from past experiences that he had a tendency to lose control of his drinking, he generally refrained from alcohol use until he arrived overseas. On arrival here, his unstable marital relationship collapsed, and he also experienced significant job stresses. He succumbed to peer influences as in the past, and soon he was consuming alcohol several times a week. He unsuccessfully attempted to decrease his drinking. Recently, he had experienced blackouts.

The service member was placed under observation. Over the following 24 hours he became increasingly tremulous and agitated. He also displayed tachycardia, sweating, mild blood pressure elevation, and nausea.

Medications were given, and his condition was monitored for the next few days. He recovered uneventfully. On the recommendation of the medical officer, he was enrolled in the RTF (Track III) by his commander because he had been a "good performer" until recently. He complied with the program requirements, elected to take disulfiram, and appropriately confronted his long-standing substance disorder. He regularly attended the AA meetings and displayed a definite motivation toward rehabilitation. On the successful completion of the inpatient phase, he returned to duty and continued treatment as an outpatient. Follow-up 8 months later indicated that the soldier was doing well on duty and had remained abstinent.

Comment: Some soldiers with 8 to 15 years of active service turn to alcohol or drugs in the midst of personal or career crises. The above case exemplifies the commander's concern for his soldier and the therapist's attentiveness to the patient's life circumstances.

## TREATMENT MODALITIES

### Counseling

Therapeutic groups and group therapy are the principal treatment modalities for alcoholism. Individual counseling is of limited use in a disease that is best treated by peer group support and group counseling.<sup>68</sup> When individual sessions are used, it is to provide the initial support, confrontation, ventilation, and resolution of the immediate crisis. These sessions are basically used to prepare the individual for group counseling and AA. In both types of counseling, the here-and-now approach is utilized with the focus on abstinence. Exploration as to reasons for drinking are avoided. The counseling is done in a supportive confrontational manner, especially in dealing with the strong denial of the patients.

The peer group provides the extremely necessary support and a system of dealing with anxiety, isolation, loneliness, anger, and rejections. These therapeutic groups serve as a place for patients to learn about alcoholism, benefit from fellow patients in different stages of recovery, and obtain help from members for specific problems.

### Alcoholics Anonymous and Other Self-Help Groups

Founded more than 50 years ago by two men seeking a means to remain abstinent, AA has continued to be the most potent of all resources to help those with alcoholism. It is considered a bona fide treatment modality by the military and is used extensively by both outpatient and inpatient programs. AA is the organization that a soldier must

largely depend on for his continued recovery. Its basic beliefs are embodied in the well-known 12 steps.<sup>69</sup>

The AA program is a spiritual way of life without any creed or dogma. It is compatible with any program of recovery and is a vital adjunct to the management of alcoholism. AA has always viewed alcoholism as a disease and has considered abstinence as the only realistic goal. It teaches its members to resist the strong internal and external pressures to drink by living one day at a time. For many years before the establishment of any military treatment program, AA was the only source of "treatment" available. Soldiers who were motivated and who participated seemed to obtain the help that they sought.

Alcoholism is a lifelong disorder; therefore, for continued support and recovery, the individual should become dependent on the AA program rather than any particular individual or agent. AA groups provide hope, a social network to remain abstinent, a crisis response system, and a worldwide organization with many members and local branches. For many, the missing of AA meetings usually leads to a relapse.

Conceptualized in a similar manner, NA is currently available for those that abuse or are dependent on other substances. Al-Anon and Alateen work in conjunction with AA to assist family members of those with alcoholism to help themselves and their addicted member by providing education, support, and needed interventions. A relatively new organization, Adult Children of Alcoholics (ACOA), is helpful for those whose parents

had alcoholism. For those who are atheists or who eschew a dependent role, a new organization based on Ellis' Rational Emotive Therapy and cognitive therapy is emerging. These groups supply peer support similar to AA.

### **Disulfiram**

No medication by itself should be considered the treatment for alcoholism. There are medications, however, that can serve as adjuncts to treatment. Disulfiram (Antabuse) is one that is used extensively in the recovery programs of both outpatients and inpatients with good success.<sup>70</sup> In military treatment centers, although encouraged, it is not made a requirement. It is only prescribed with the patients' full knowledge and consent. Offered to help one resist the impulse to drink, it is compatible with other forms of alcoholism treatment. Although short-term use of disulfiram should be the intent while the person solidifies his recovery program, this medication has been used for 1 year or more in those that have required this support.

Disulfiram should not be used in those with significant liver disease or those that are unable to stop the use of alcohol. Other methods should be utilized to encourage abstinence. Before prescribing disulfiram, the physician should review its precautions, contraindications, and drug interactions.

Disulfiram works by blocking the enzyme aldehyde dehydrogenase, which is necessary for the breakdown of acetaldehyde. On ingestion, alcohol is metabolized in the liver to acetaldehyde. Disulfiram causes the accumulation of acetaldehyde, which produces the "alcohol-Antabuse reaction." This *reaction* is manifested by nausea, flushing, dysphoria, dyspnea, hypertension, headache, and sometimes emesis and syncope. In rare instances in which the individual has cardiovascular or cerebrovascular disease, heart failure, stroke, and death are possible. Very rarely disulfiram may produce an acute brain syndrome mimicking intoxication. This occurs in about one in 1,000 patients and usually on higher doses (500 mg).<sup>70</sup> It is fully reversible with discontinuance of disulfiram. Careful monitoring of patients on disulfiram is essential because it is not an innocuous drug.

Patients starting disulfiram need to be free of alcohol for at least 1 full day. The usual procedure is to prescribe a loading dose of 500 mg for a few days and then a daily maintenance dose of 250 mg. Because taking alcohol in any form may cause a reaction, before starting this medication, patients

need to be instructed on the foods and products containing alcohol. Medication in elixir form should be avoided unless it specifically is labelled nonalcoholic. Sensitive persons may react to aftershave lotion, mouthwashes, or external agents containing alcohol usually through inhalation. Because disulfiram accumulates in the body, patients may have some reaction to alcohol up to 2 to 3 weeks after the last dosage if they resume drinking. Because some complain of drowsiness after taking disulfiram, the dosage can be taken before sleep rather than during the day. Other minor complaints are of a metallic or garlic taste in the mouth and mild indigestion. The former disappears in a week or so, and the latter can be controlled by taking disulfiram with food. For those allergic to disulfiram, metronidazole (Flagyl) is an alternative medication that also blocks aldehyde dehydrogenase. Metronidazole and disulfiram should not be taken together.

### **Psychiatric Comorbidity**

A variety of clinically significant psychiatric disorders can coexist with alcohol dependence. These disorders confer a poorer prognosis in treatment and modification of treatment with additional psychotherapeutic approaches, and pharmacologic agents may be necessary. To diagnose and treat these disorders, it is essential that these soldiers are also seen at the local mental health facility or by the division psychiatrist. Depression is the most common associated mental disorder among those with alcoholism. Depressive symptoms commonly seen in alcohol withdrawal frequently remit spontaneously with time. For depression that persists beyond the period of acute withdrawal, a tricyclic antidepressant or heterocyclic antidepressant is the usual drug of choice. These medications are usually appropriate for chronic anxiety and panic attacks of the hyperadrenergic state also.

Because comorbid disorders contribute to the deficient behavior and functioning of one with alcoholism, the treatment of concomitant pathology is essential. Psychotropic medications may be indicated to treat the negative states that contribute to relapse.<sup>38</sup> These medications include antidepressants, lithium, antipsychotics, and antianxiety agents. It is necessary to assess the response and continued indications in follow-up. The antianxiety agent of choice is buspirone because it is not addictive and does not increase alcohol brain depression.

## PREVENTION AND CONTROL

### Current Data

The efforts since 1971 in decreasing substance abuse among military personnel have resulted in significant gains in the 1980s. Worldwide studies<sup>18</sup> during the past 10 years have indicated a general decline in both drug and alcohol use. However, the reduction in drug use has been much more substantial than has alcohol reduction.<sup>17</sup> "Drug use among military personnel declined dramatically between 1980 and 1988 and is now the lowest since the survey series began. The declines are probably partially related to similar declines among civilians, but they also demonstrate the continuing effectiveness of military efforts to eliminate drug use among military personnel."<sup>26(pixix)</sup>

Although the abuse of psychoactive drugs may have been significantly curtailed by the current military preventive and control measures,<sup>26</sup> alcohol, by its availability and widespread use, continues to create a problem among its users. "In 1988, about 83 percent of military personnel were current drinkers, with about two thirds being moderate to heavy drinkers and 8.2 percent being heavy drinkers."<sup>26(p13)</sup> "Drinking levels are positively related to serious consequences. Heavy drinkers experience the most consequences."<sup>26(p35)</sup>

Recent epidemiological studies indicate an increasing consumption of alcohol in the general population, and the prevalence of alcoholism seems to be increasing as well. In those that are susceptible, the risk of alcoholism is greater, with the age of onset being earlier than in the past.<sup>28</sup> This phenomenon would impact on the military services in a significant manner because the bulk of the service members are young people.

In the military services, current alcohol and drug use seems to be concentrated among the younger, less-educated, unmarried, junior and midcareer enlisted personnel.<sup>71</sup> It has also been noted that "alcohol-related serious consequences, productivity loss, and alcohol dependence are substantially higher among E1 to E3 pay grades; for any negative effects and alcohol dependence, rates for E1 to E3s are almost twice as high as E4s to E6s and for productivity loss, about 10 percentage points higher."<sup>26(p33)</sup> It seems essential that the current programs be continued to maintain the gains of recent years.

### Biochemical Testing

Random urinalysis for substances has been important not only to identify abusers as early as

possible, but also to serve as a deterrent to the use of substances by troops. The techniques of biochemical analysis as well as the administrative procedures in running a secure testing program have been significantly refined to minimize false-positives. A urine positive rate up to 2% has been considered acceptable within the troop population as evidence of adequate surveillance and control. A rate higher than this would be of some concern as to the adequacy of control measures. Identification of drug abusers as early as possible is considered important to not only restrain their own drug use, but to curtail the spread of drug use to others in the unit.<sup>72</sup>

Only results reported from the large certified laboratories can be counted on as legal evidence; any testing done in the field is still considered inaccurate. For purposes of assessment and treatment, these field test results may be useful but not beyond that. Likewise, breathalyzers are very useful in the field for the determination of alcohol in the blood, but their use is limited to medical management. Recently, drug testing has included cannabis, cocaine, phencyclidine (PCP), opiates, and amphetamines where use of these substances is suspected. The presence of medicinals, such as opiates and amphetamines, on urine drug screens create special problems; therefore, written procedures are available to the physician (medical review officer) in evaluating these cases.

### Education

In any preventive program, education remains the key, and this cannot be overemphasized in the area of substance abuse. Disciplinary action and treatment are means of dealing with abusers of substances, but primary prevention depends on the educational efforts promoted by command. A variety of means are available to command to do this. Alcohol and drug preventive educational sessions are usually included during annual training with support from the installation Alcohol and Drug Counseling Center.

### Deglamorization of Alcohol

Deglamorization appears to have done its part in the reduction of alcohol use and abuse in recent years. Military social activities no longer emphasize drinking, and even penalties are awarded in situations in which drinking is

promoted. The health promotion efforts of the DoD definitely seem to have a positive impact on the current attitude toward alcohol and drug use not only in the workplace, but also at all other times.

In addition, the driving while intoxicated program, with commanders being notified and be-

ing involved in some administrative action, appears to serve as a positive deterrent. Because prevention and control are a command responsibility, commanders should be familiar with the administrative and medical resources at hand to accomplish the mission of maintaining the unit's health and readiness.

## OPERATIONAL CONSIDERATIONS

### The Combat Medical Provider's Tasks

Substance abuse disorders have a special interest to military medicine and, in particular, to those in the combat environment. The unique problem for the combat care provider is that while he can expect to deal with the consequences of abuse, he must improvise a solution without the familiar structure of the employee assistance model that is commonly available throughout the DoD in peacetime. Given the elevated base rates for substance misuse under conditions of excessive combat stress, before reaching a diagnosis of substance dependence, he must guard his index of suspicion by avoiding criteria based on amounts consumed. The problem is that the threshold of abuse (as defined chiefly by consumption level) may rise above the norms to which the clinician is accustomed. Moreover, his clinical objectives are defined by the short-term focus of manpower conservation to return the patient to duty, rather than the long-term goal of occupational rehabilitation. His immediate concerns are detoxification and observation for acute withdrawal syndromes, with less attention given to the soldier's rehabilitation.

Three predictions appear likely: first, the combat clinician will treat an increased number of overuse cases than he would typically encounter in peacetime practice; second, there will be no greater incidence of substance dependence disorders than normally occurs (3 to 5% in the military population);<sup>26</sup> and third, dependence disorders will be more difficult to confirm because of increased consumption and the pressures to return expeditiously as many patients as possible to duty. That is, the sensitivity and specificity of his clinical decisions will be markedly affected by the aberrant consumption patterns of wartime.

### Limiting Interference

This presents the greatest clinical dilemma: it is no less important to obtain correct and timely treat-

ment of the alcoholic or drug-dependent soldier during wartime, regardless of the difficulty in detection. In the midst of interference created by increased consumption of alcohol and adventitious use of illicit substances, how can the clinician improve his ability to identify the patient who should receive a definitive rehabilitation for a substance dependence disorder? The answer—he must emphasize command consultation with the goal of encouraging the primary prevention of substance use through command policies that deglamorize excessive alcohol consumption and assist abstinence from illicit drugs through detection and administrative sanctions (to include judicial avenues).

Recognizing that the exaggerated consumption he observes is symptomatic of the stressful environment, he may assist the commander to lower the stress by facilitating increased cohesion, communication, and group support to dissipate some of the excess tension. Finally, he can make the commander aware that he may have the strongest influence over excessive consumption because key factors to excessive use are social pressure to drink and inexpensive alcoholic beverages. In fact, social pressure and inexpensive access may explain two-thirds of the difference between various occupational groups considered at high risk for drinking problems.<sup>20</sup>

### Setting The Stage For Rehabilitation

In a combat environment, the clinician should not anticipate that he will have the luxury of sending many (if any) with chronic alcoholism away for rehabilitation. Most of his efficacy must be directed toward the acute condition and his clinical role in setting the stage for later definitive treatment. He can do this in several ways. First, he can provide the patient with an unequivocal diagnosis of substance abuse when the facts support it. Not uncommonly, a patient has been released after detoxification without a frank discussion between doctor and patient about his alcoholism. The cofounder of the Navy's rehabilitation system received no less than seven

postretirement hospitalizations before anyone mentioned the connection between the detoxification and substance abuse.<sup>73,74</sup> In addition, one must docu-

ment all the facts as they are revealed in the history so that future providers can follow a trend. This sets the stage for later intervention.

## SUMMARY AND CONCLUSION

Among newly inducted young service members, there usually is an increased use of a substance, namely alcohol, in the new military setting. This may be to alleviate the anxiety of being in a stressful situation as well as exercising the new found freedom away from home. In addition, illicit drug use that may be associated with alcohol use can emerge.

Because the experiment with Prohibition was a failure, alcohol will always be with us. Thus, there will always be service members who will develop abuse and dependence disorders. Likewise, drugs of whatever nature, such as cannabis, phencyclidine, cocaine, amphetamines, opiates, or designer drugs, will periodically emerge to threaten and undermine the health and readiness of troops.

Since 1971, the military services, with their resolve to deal with substance abuse among their

ranks with intensive programs of prevention, control, and treatment, have been rewarded with almost a total eradication of illegal drug use and a decreasing alcohol consumption. The command-centered substance abuse program with support from the medical services has been highly successful. The continued success of the substance abuse program will depend on the viability of the existing structure and relationship with command.

Whether in peace or in war, substance abuse is a problem that requires monitoring and surveillance. In addition, substance abuse cannot be separated into a command or a medical problem. Because the emergence and the maintenance of substance abuse are multidetermined, like any behavior, the management and disposition are highly complex and require both administrative and medical elements.

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